

Abstract of the disclosure

A surface irrigation apparatus and method, wherein water or nutrients are supplied to the surface irrigation apparatus through a water or nutrients supply conduit and distributed through a plurality of water or nutrient distribution conduits. Each water or nutrients distribution conduit includes a plurality of spaced injection nozzles through which water or nutrients are injected directly downward into the soil root zone of the plants, trees, or shrubs being cultivated. A valve and a controller to control the valve are also included. A moisture sensor can also be used to sense the moisture level in the soil to activate the controller. Said valve, controller and moisture sensor are commercially available valve, controller and moisture sensor.

Addendum to Specification
(for clarification purposes only)

PHOTOGRAPHS

FIG. 1 is a perspective view (digital photograph) of a typical injection nozzle of this surface irrigation apparatus and method.

FIG. 2 is a perspective view (digital photograph) of a typical arrangement of the apparatus and method, depicting several rows of sweet corn located in a home vegetable garden.

FIG. 3 is a perspective view (digital photograph) of a cylindrical hole being formed by the injection nozzle delivering water or nutrients downward into the root zone area. This embodiment facilitates the rapid absorption of water or nutrients into the soil.

FIG. 4 is a perspective view (digital photograph) of the apparatus and method as utilized in a home vegetable garden.

Detailed Description of the Photographs

FIG. 1 is a digital photograph of a typical injection nozzle of this novel surface irrigation apparatus and method shown in operation. Notice how it “injects” water or nutrients directly downward into the root zone area.

FIG. 3 is also a digital photograph of a typical injection nozzle in operation; however, it shows how the nozzle drills (by water injection) a cylindrical hole into the soil, thereby penetrating the root zone area from the surface and greatly enhancing the absorption and diffusion of water or nutrients. This method of irrigation greatly reduces water loss due to evaporation; it also provides water or nutrients directly to the plant roots. This irrigation method greatly reduces the germination of weeds between plant rows; it also

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minimizes the presence of moisture loving insects, while at the same time deterring the growth of mold, fungus, rust, and mildew.

FIG. 2 and FIG. 4 are digital photographs of a typical home garden application of this novel surface irrigation apparatus and method.